CURRICULUM VITAE

Sara Del Valle

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EDUCATION

Ph.D. Candidate	**Applied Mathematics and Computational Sciences,** University of Iowa Expected graduation: July 2005
Master of Science	**Applied Mathematics**, May 2001, New Jersey Institute of Technology
Bachelor of Science	**Applied Mathematics,** 1996 – 2000, New Jersey Institute of Technology

RESEARCH INTEREST

Dynamical Systems	Study of long-term qualitative behavior of spread of diseases
Mathematical Theoretical and Computational Epidemiology	Modeling emerging and re-emerging infectious diseases and determining effective control strategies to halt disease transmission
Social Dynamics	Study of how systems, individuals, and societies evolve and change over space and time
Statistical Applications to Epidemiology	Interpretation of data and estimation of population and epidemic parameters
Homeland Security	Mathematical modeling of deliberate or accidental release of biological agents and system analysis in the presence of uncertainty

HONORS AND AWARDS

Fellowships	Alfred P. Sloan Foundation Dissertation Fellowship, 2004 – 2005
	The Graduate Assistant in Areas of National Need (GAANN) Fellowship, 2001 – 2002
Scholarships	Distinguished Edward J. Bloustein Scholarship, 1996 – 2000
Awards	Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) Poster Award, 2001
	Who's Who Among Students in American Universities and Colleges Award, 2000
	American Scholar Award, 2000
	Excellence in Academic Performance Award, 1996 – 2000
	Excellence in Mathematics Award, 1996

RESEARCH EXPERIENCE

Graduate Research Guest	Mathematical Modeling and Analysis Group, LANL, August 2004 – Present
Graduate Research Assistant	Mathematical and Theoretical Biology Institute (MTBI), LANL, June 2004 – August 2004
	Center for Nonlinear Studies (CNLS), LANL, January 2003 – January 2004
	Institute for Mathematics and its Applications (IMA), University of Minnesota, Summer 2002
	MTBI, Cornell University, Summer 2001
Undergraduate Research Assistant	MTBI, Cornell University, Summer 2000
	Department of Mathematics, NJIT, August 1999 – May 2000

PROFESSIONAL EXPERIENCE

Teaching Assistant	I thought discussion sessions for Calculus and Pre-Calculus courses, NJIT, 1998 – 20001
Math Tutor	I tutored Pre-Calculus students, NJIT, 1997
Editor	I helped Dr. Katzen revise a Pre-Calculus book, NJIT, 1996

PUBLICATIONS

Journal Articles	Effects of Education, Vaccination and Treatment on HIV Transmission in Homosexuals with Genetic Heterogeneity, **S. Del Valle,** A. Morales-Evangelista, M.C. Velasco, C. Kribs-Zaleta, *Journal of Mathematical Biosciences*, **187** 111-33 (2004)
	Effects of Behavioral Changes in a Smallpox Attack Model, **S. Del Valle,** H. Hethcote, J.M. Hyman, C. Castillo-Chavez, *Submitted to Journal of Mathematical Biosciences*
Technical Reports	Designing Airplane Struts Using Minimal Surfaces, T. Grandine, **S. Del Valle**, T. Moeller, S.K. Natarajam, G.V. Pencheva, J.C. Sherman, S.M. Wise, *Technical report for the IMA*, University of Minnesota, 2002
	Deterministic and Stochastic Reaction-Diffusion Models in a Ring, G. Chowell, **S. Del Valle**, L. Martino, D. Kerman, *Technical report for MTBI*, Cornell University, 2000
Projects Supervised	Cellular Noise and the Aging Process, T. Begay, N. Dowdall, M. Gluck, O. Okunola, *MTBI*, 2004
	The Effects of Student-Teacher Ration and Interactions on Student/Teacher Performance in High School Scenarios, K. Diaz, C. Fett, G. Torres-Garcia, *MTBI*, 2003
Work in Progress	Mixing Patterns Between Age Groups as Determined by EpiSimS, **S. Del Valle,** et al.
	Modeling Epidemic Outbreaks with Age Structure and Behavioral Changes, **S. Del Valle,** H. Hethcote, J.M. Hyman
	Transmission of Smallpox on Clusters, **S. Del Valle,** et al.
	The Economic Impact of a Smallpox Attack, **S. Del Valle**, et al.

PRESENTATIONS

Invited Talks

Effects of Behavioral Changes in a Smallpox Attack Model, Computational and Mathematical Population Dynamics, Trento, Italy, 2004

Effects of Behavioral Changes in a Smallpox Attack Model, Biomathematics Conference, University of Iowa, 2003

Effects of Behavioral Changes in a Smallpox Attack Model, Annual Meeting of the Society for Mathematical Biology, University of Dundee, UK, 2003

Effects of Behavioral Changes in a Smallpox Attack Model, SACNAS National Conference, Albuquerque, NM, 2003

Effects of Behavioral Changes in a Smallpox Attack Model, Computational and Mathematical Approaches to Homeland Security, Public Health and Control: Challenges Posed by Emerging and Re-Emerging Diseases CNLS Conference, LANL, 2003

Stability Analysis: Methods in Epidemiology, Mathematical Epidemiology Graduate Student Seminar, LANL, 2003

Effects of Behavioral changes in a Smallpox Attack Model, Epidemiological Simulation System Research Group, LANL, 2003

Non-local Response in a Simple Epidemiological Model, Mathematical Epidemiology Graduate Research Seminar, LANL, 2003

Poster Presentations

Transmission Potential of Smallpox, Mathematical Epidemiology Graduate Student Seminar, LANL, 2003

Effects of Behavioral Changes in a Smallpox Attack Model, Workshop on Science Based Prediction, LANL, 2003

Effects of Education, Vaccination and Treatment on HIV Transmission in Homosexuals with Genetic Heterogeneity, SACNAS National Conference, Phoenix AZ, 2001

Deterministic and Stochastic Reaction-Diffusion Models in a Ring, SACNAS National Conference, Atlanta GA, 2000

Conferences Attended	Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) Working Group on Methodologies for Comparing Vaccination Strategies, Rutgers University, 2004
	DIMACS Modeling Social Responses to Bioterrorism Involving Infectious Agents, Rutgers University, 2003
	The CNLS 23rd Annual Conference on Networks, Structure, Dynamics and Function, Santa Fe NM, 2003

PROFESSIONAL ACTIVITIES

Conferences Organized	CNLS Conference on Homeland Security: Computational and Mathematical Approaches to Homeland Security, Public Health Policy and Control: Challenges Posed by Emerging and Re-emerging Diseases, LANL, 2003
Workshops Organized	CNLS Workshop on Epidemiology: Mathematical Epidemiology, LANL, 2003
Seminars Organized	Mathematical Epidemiology Graduate Student Seminar Series, LANL, 2003

PROFESSIONAL MEMBERSHIPS

	Society for Mathematical Biology, 2002 – Present
	American Mathematical Society, 2002 – Present
	Center for Discrete Mathematics and Theoretical Computer Science, 2003 – Present
	Society for the Advancement of Chicanos and Native Americans in Science, 2000 – Present

PROFICIENCIES

Computer Environments	Unix/Linux, Windows, MacOSX
Languages	C/C++, Matlab, Maple, Mathematica, Latex, MINITAB, Berkeley Madonna, Spanish, conversational Portuguese

REFERENCES

Herbert Hethcote
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